REMARKS

At the time the current Official Action was mailed, the Examiner rejected claims 1 and 3/1 and objected to claims 2 and 3/2 for relying on a rejected parent claim. Applicant thanks the Examiner for indicating that claims 2 and 3/2 would be allowable if rewritten in independent form. Applicant respectfully traverses the rejection of claims 1 and 3/1. Reconsideration of the application in view of the remarks set forth below is respectfully requested.

Rejections under 35. U.S.C. § 103

In the Office Action, the Examiner rejected claims 1 and 3/1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,828,793 (Mann) in view of U.S. Patent No. 5,033,096 (Morrison et al., hereinafter "the Morrison reference"). Specifically, the Examiner stated:

> Mann discloses a method of creating an image with a still video camera (col. 11 lines 43-46, figure 8, element 202). Mann further teaches that the image is transferred to **a** computer to be stored on a main memory 210 represented as 212_1, 212_2, 213_3, etc. (col. 11 lines 46-54). Mann also teaches that the composite images formed from a series of input images wherein every pixel of the composite image is drawn from the corresponding pixel in each of the input source images according to a weighted average. The weighting is based on a certainty function associated with each source image pixel corresponding to an output pixel in the final composite image. The value of the relevant pixel parameter for a given final-image pixel (weighted average of n samples) is given by

$$\sum_n c_n P_n / \sum_n c_n$$

where c is the certainty function associated with the corresponding pixel of each source image n (col. 6 line 5 1 -col. 7 line 8). It is noted that P_n (pixel parameter) is dependent upon exposure time, brightness or luminance and the gain of the system. Mann teaches that the resulting pixel image represented by the expression above is saved in a target buffer 250 whose contents are shown on screen display 234 (col. 12 lines 32-49). The features such as gamma correction (other image data) are also stored in the target image data (col. 13 lines 4-8).

Mann fails to teach explicitly obtaining a substantially linear representation of the image. However Morrison et al. teach a method of summing the amount of light (brightness levels) of all the rows of pixels in order to generate a linear array of summation values in which the summation values are allocated to positions of the sensor values in the CCD array (col. 7 line 57 - col. 8 line 18, figure 5) in order to cancel the totally random noise errors in the signals from each element of the CCD by summing them so that the localized abnormalities do not have substantial effect on the value.

Therefore taking the combined teachings of Mann and Morrison, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have obtained a substantially linear representation of the image by summing them in order to cancel the totally random noise errors in the signals from each element of the CCD by summing them so that the localized abnormalities do not have substantial effect on the value as taught in Morrison (col. 3lines 10- 1 5).

Office Action, Pages 2 and 3.

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d. 1430 (Fed. Cir. 1990). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985).

Further, the pending claims must be given an interpretation that is reasonable and consistent with the *specification*. *See In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969) (emphasis added); M.P.E.P. §§ 608.01(o) and 2111. Indeed, the specification is "the primary basis for construing the claims." *See Phillips v. AWH Corp.*, No. 03-1269, -1286, at 13-16 (Fed. Cir. July 12, 2005) (*en banc*). One should rely *heavily* on the written description for guidance as to the meaning of the claims. *See Id.* Interpretation of the claims must also be consistent with the interpretation that *one of ordinary skill in the art* would reach. *See In re Cortright*, 165 F.3d 1353, 1359, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); M.P.E.P. § 2111. "The inquiry into how a person of ordinary skill in the art understands a claim term provides an

objective baseline from which to begin claim interpretation." *See Collegenet, Inc. v. ApplyYourself, Inc.*, No. 04-1202, -1222, 1251, at 8-9 (Fed. Cir. August 2, 2005) (quoting *Phillips*, No. 03-1269, -1286, at 16). The Federal Circuit has made clear that derivation of a claim term must be based on "usage in the ordinary and accustomed meaning of the words amongst artisans of ordinary skill in the relevant art." *See Id.*

Improper Construction of Claim Terms

Turning to the claims at issue, claim 1 recites, *inter alia*, "obtaining a substantially linear representation of the brightness of an image." (Emphasis added.) The Examiner has misconstrued the term "linear" to mean spatially in a line. This construction is inconsistent with the specification, which uses the term "linear" to mean "directly proportional." By way of example, the specification contrasts a linear image with a non-linear representation of an image. Specification, paragraph 4. In the exemplary non-linear representation of an image, brightness is logarithmically proportion to image intensity rather than directly proportional to image intensity. *See* Specification, paragraph 4. Further, claim 1 also indicates that "linear" does not mean "spatially in a line." Claim 1 recites "calculating an estimate of true image intensity $\hat{i}_{xy}$" "for each of a set of pixels (x, y) in a two dimensional array." Thus, the output, $\hat{i}_{xy}$, is also two dimensional and not spatially linear. Accordingly, Applicant respectfully asserts that construing the term "linear" to mean "in a line" contradicts the specification and is improper.

Features Missing from the Cited References

Independent claim 1 recites, *inter alia*:

> ... calculating an estimate of the true image intensity (i_{xy}) as a weighted average of n samples of the apparent image intensity ($v_{n,xy}$) as

$$\hat{i}_{xy} = \frac{\sum_n \left(w_{n,xy} \left(\frac{v_{n,xy} - C}{K T_n} \right) \right)}{\sum_n w_{n,xy}} = \frac{1}{K} \frac{\sum_n \left(w_{n,xy} \left(\frac{v_{n,xy} - C}{T_n} \right) \right)}{\sum_n w_{n,xy}}$$

> where $v_{n,xy}$ is the apparent intensity measured, T_n is the exposure time, K is the gain of the system, C is an offset and $w_{n,xy}$ is a weighting factor which is defined to maximise the signal to noise ratio and discard insignificant, that is saturated or near zero, values;...

The present rejection is flawed for a number of reasons. For example, neither the Mann reference nor the Morrison reference, taken alone or in hypothetical combination, teach or suggest the step of obtaining a substantially linear representation of the brightness of an image in the manner recited by in claim 1. Indeed, Applicant agrees with the Examiner's statement that "Mann fails to teach explicitly obtaining a substantially linear representation of the image." Further, Applicant respectfully asserts that the Morrison reference also fails to disclose these features. As indicated by the equation above, claim 1 recites calculating a true image intensity (i_{xy}) for each pixel with "a weighted average of n samples of the apparent image intensity (v_{xy})" for each pixel. (Emphasis added.) In sharp contrast, the Morrison reference teaches an edge detection technique that is performed on a single

sample. *See* Morrison, col. 8, ll. 19-22. To detect an edge within a single image, the Morrison reference teaches "[s]umming all the horizontal rows" of pixels into a single column, or spatially linear array. *See* Morrison, col. 8, ll. 7-8 and 38-39. The spatially linear array is then analyzed using an edge detection algorithm. *See* Morrison, col. 8, ll.19-37 and Fig. 5. In other words, the Morrison reference teaches adding pixels in a row, i.e., $\sum_{x}$ or $\sum_{y}$, and not adding corresponding pixels from multiple images, or $\sum_{n}$, as recited by independent claim 1. Accordingly, the Mann reference and the Morrison reference, taken alone or in hypothetical combination, cannot render obvious claim 1 or the claims that depend therefrom.

For these reasons among others, Applicant respectfully requests withdrawal of the rejections under 35 U.S.C. § 103.

Conclusion

The Applicant respectfully submits that all pending claims are in condition for allowance. However, if the Examiner believes certain amendments are necessary to clarify the present claims or if the Examiner wishes to resolve any other issues by way of a telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number indicated below.

In accordance with 37 C.F.R. § 1.136, Applicant hereby provides a general authorization to treat this and any future reply requiring an extension of time as incorporating a request thereof.

Respectfully submitted,

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